

What is claimed is:

1. A method of measuring continuously and fractionally the concentration of a total mercury (Metallic Mercury + Bivalent Mercury) and the concentration of elemental mercury contained in gases, said method comprising:

fluid connecting a first column, filled with a first fixed catalyst, and a second column, filled with a second fixed catalyst, in parallel relation to each other;

introducing the gases into the first and second columns;

causing the first fixed catalyst in the first column to collect and remove the bivalent mercury and passing only the elemental mercury in the gases through the first column;

causing the second fixed catalyst in the second column to reduce the bivalent mercury into elemental mercury and passing through the second column the elemental mercury in the gases containing the elemental mercury into which the bivalent mercury has been reduced; and

by utilization of first and second mercury measuring instruments, measuring the concentration of the elemental mercury in the gases, from which the bivalent mercury has been removed after passage thereof through the first column, as the concentration of the elemental mercury contained in sampled gases and measuring the concentration of the elemental mercury in the gases into which the bivalent mercury has been reduced after passage thereof through the second column, as the concentration of the total mercury in the sampled gases, respectively.

2. The mercury measuring method as claimed in Claim 1, further comprising removing a component likely to interfere with the mercury measurement which includes a sulfurous acid gas, from the gases after the gases have been passed through each of the first and second columns.

3. A method of measuring the concentration of mercury contained in gases, wherein sampling of the gases, measurement of the concentration of

mercury contained in the gases by the use of the mercury measuring method as claimed in Claim 1 and display of measurements of the mercury are carried out continuously and on real time basis.

4. An apparatus for measuring continuously and fractionally the concentration of a total mercury (Metallic Mercury + Bivalent Mercury) and the concentration of elemental mercury contained in gases, said apparatus comprising:

a first column filled with a first fixed catalyst for collecting and removing the bivalent mercury, contained in gases introduced thereinto, but allowing only the elemental mercury in the gases to pass therethrough;

a second column fluid connected parallel to the first column and filled with a second fixed catalyst for reducing the bivalent mercury, contained in gases introduced thereinto, into elemental mercury and passing therethrough the elemental mercury in the gases containing the elemental mercury into which the bivalent mercury has been reduced; and

first and second mercury measuring instruments for measuring the concentration of the elemental mercury in the gases, from which the bivalent mercury has been removed after passage thereof through the first column, as the concentration of the elemental mercury contained in sampled gases and measuring the concentration of the elemental mercury in the gases into which the bivalent mercury has been reduced after passage thereof through the second column, as the concentration of the total mercury in the sampled gases, respectively.

5. The mercury measuring apparatus as claimed in Claim 4, further comprising an interfering component removal column positioned downstream of each of the first and second columns with respect to a direction of supply of the gases, said interfering component removal column being operable to remove a component likely to interfere with the mercury measurement which includes a sulfurous acid gas, from the gases.